Electronic TUBES

6DZ7

TWIN PENTODE

FOR AF POWER AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6DZ7 is a twin power pentode designed for use in the output stage of high-fidelity audio amplifiers. The incorporation of two pentode sections in one envelope makes it especially suitable for compact stereo systems.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC	6.3		Volts
Heater Current	1.52		Amperes
	Section 1	**Section 2**	
Direct Interelectrode Capacitances, approximate*			
Grid-Number 1 to Plate	0.7	0.5	μμf
Input	11	11	μμf
Output	5.0	5.0	μμf
Grid-Number 1, Section 1 to Grid-Number 1, Section 2	0.03		μμf
Plate, Section 1 to Plate, Section 2	1.5		μμf

MECHANICAL

Mounting Position—Any
Envelope—T-12, Glass
Base—B8-110, Short Medium-Shell Octal 8-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES, EACH SECTION UNLESS OTHERWISE INDICATED

Allowable Heater Voltage	5.7 to 6.9	Volts
Plate Voltage	440	Volts
Screen Voltage	300	Volts
Plate Dissipation	13.2	Watts
Screen Dissipation, Total	4.0	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance	0.27	Megohms

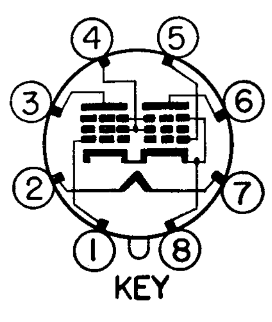
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.



BASING DIAGRAM

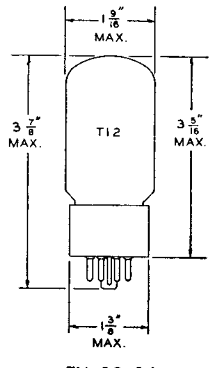


EIA 8JP

TERMINAL CONNECTIONS

Pin 1—Grid Number 1 (Section 2)
Pin 2—Heater
Pin 3—Plate (Section 2)
Pin 4—Grid Number 2 (Both Sections)
Pin 5—Grid Number 1 (Section 1)
Pin 6—Plate (Section 1)
Pin 7—Heater
Pin 8—Cathode and Grid Number 3 (Both Sections)

PHYSICAL DIMENSIONS



EIA 12-14

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS, EACH SECTION

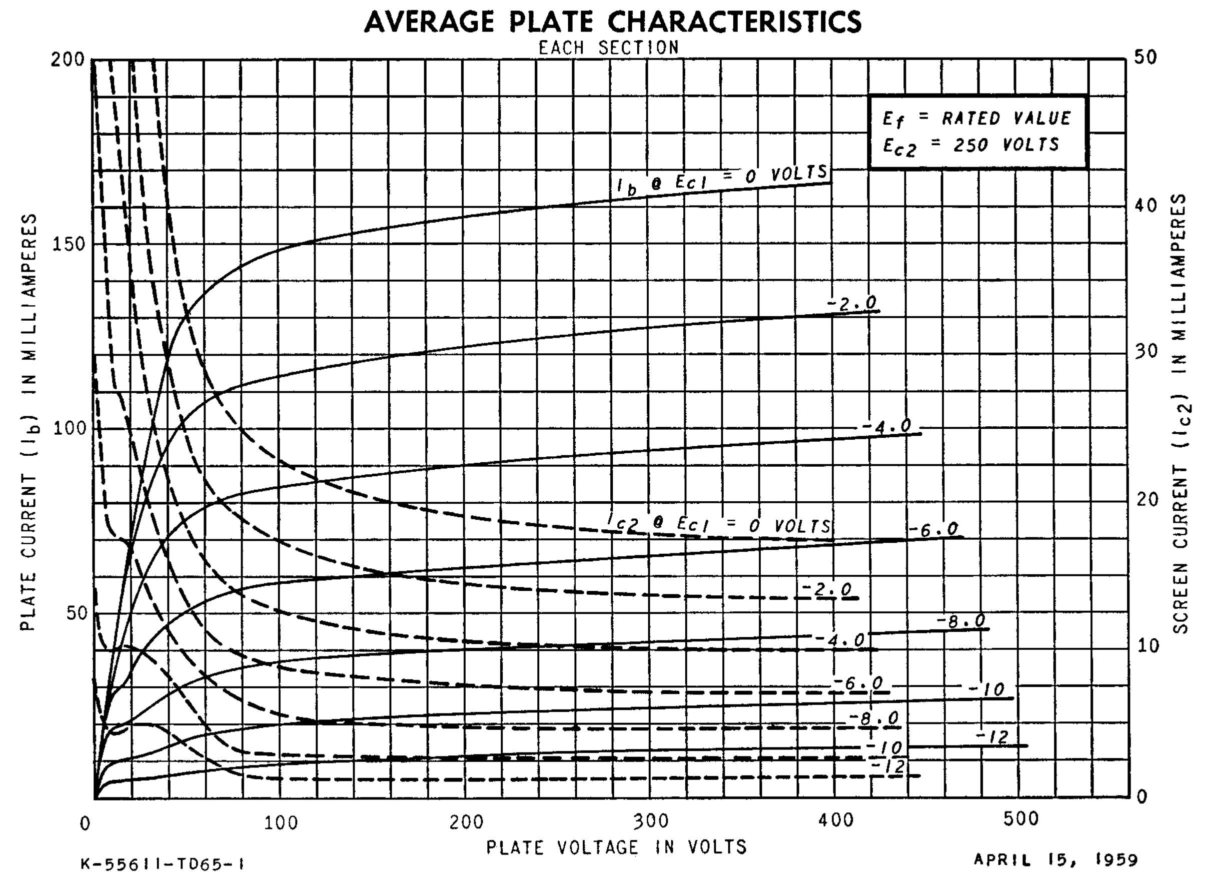
Plate Voltage	250	Volts
Screen Voltage	250	Volts
Grid-Number 1 Voltage	−7.3	Volts
Plate Resistance, approximate	38000	Ohms
Transconductance	11300	Micromhos
Plate Current	48	Milliamperes
Screen Current	5.5	Milliamperes

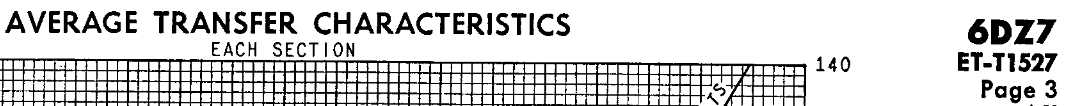
PUSH-PULL CLASS AB_1 AMPLIFIER, SINGLE TUBE

	Fixed Bias	Cathode Bias	
Plate Voltage	400	300	Volts
Screen Voltage	250	250	Volts
Grid-Number 1 Voltage	−11	....	Volts
Cathode-Bias Resistor	...	120	Ohms
Peak AF Grid-to-Grid Voltage	22	22	Volts
Zero-Signal Plate Current	40	66	Milliamperes
Maximum-Signal Plate Current	100	80	Milliamperes
Zero-Signal Screen Current	4.0	7.0	Milliamperes
Maximum-Signal Screen Current	13	15	Milliamperes
Effective Load Resistance, Plate-to-Plate	9000	9000	Ohms
Total Harmonic Distortion	2.5	3.5	Percent
Maximum-Signal Power Output	18	12	Watts

* Without external shield.

AVERAGE PLATE CHARACTERISTICS





AVERAGE TRANSFER CHARACTERISTICS
EACH SECTION

E_f = RATED VALUE
E_b = 250 VOLTS

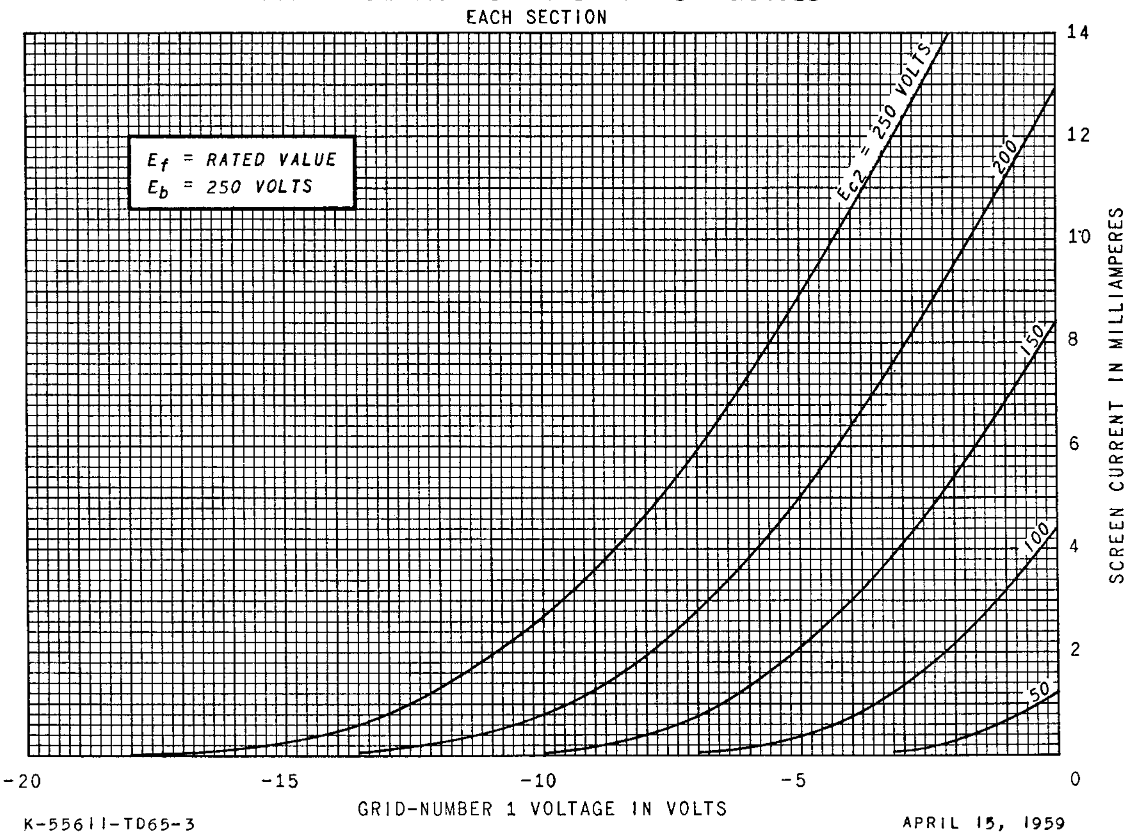
Ec2 = 250 VOLTS
200
150
100
50

PLATE CURRENT IN MILLIAMPERES
140
120
100
80
60
40
20
0

-20
-15
-10
-5
0
GRID-NUMBER 1 VOLTAGE IN VOLTS

K-55611-TD65-2
APRIL 15, 1959

AVERAGE TRANSFER CHARACTERISTICS
EACH SECTION



K-55611-TD65-3
APRIL 15, 1959

OPERATION CHARACTERISTICS

PLATE DISSIPATION RATING - PER PLATE

SCREEN DISSIPATION RATING - TOTAL

PLATE DISSIPATION

POWER OUTPUT

DISTORTION

SCREEN DISSIPATION

SINGLE TUBE PUSH-PULL
CLASS AB_1

E_f = RATED VALUE E_{c1} = -11 VOLTS
E_b = 400 VOLTS R_L = 9000 OHMS
E_{c2} = 250 VOLTS

TOTAL HARMONIC DISTORTION IN PERCENT: 0, 1, 2, 3, 4, 5, 6, 7

POWER OUTPUT IN WATTS: 0, 4, 8, 12, 16, 20, 24, 28

PLATE DISSIPATION IN WATTS - PER PLATE: 0, 2, 4, 6, 8, 10, 12, 14

SCREEN DISSIPATION IN WATTS - TOTAL: 0, 1, 2, 3, 4, 5, 6, 7

PEAK INPUT SIGNAL GRID-TO-GRID: 0, 10, 20, 30, 40

K-55611-TD65-4

APRIL 22, 1959

OPERATION CHARACTERISTICS

PLATE DISSIPATION RATING - PER PLATE

SCREEN DISSIPATION RATING - TOTAL

PLATE DISSIPATION

POWER OUTPUT

DISTORTION

SCREEN DISSIPATION

SINGLE TUBE PUSH-PULL
CLASS AB_1

E_f = RATED VALUE R_k = 120 OHMS
E_b = 300 VOLTS R_L = 9000 OHMS
E_{c2} = 250 VOLTS

TOTAL HARMONIC DISTORTION IN PERCENT: 0, 1, 2, 3, 4, 5, 6, 7

POWER OUTPUT IN WATTS: 0, 2, 4, 6, 8, 10, 12, 14

PLATE DISSIPATION IN WATTS - PER PLATE: 0, 2, 4, 6, 8, 10, 12, 14

SCREEN DISSIPATION IN WATTS - TOTAL: 0, 1, 2, 3, 4, 5, 6, 7

PEAK INPUT SIGNAL GRID-TO-GRID: 0, 10, 20, 30, 40

K-55611-TD65-5

APRIL 22, 1959

ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.

